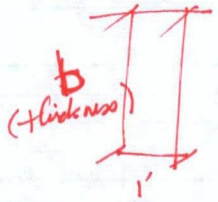
WAPATO ROADRUNNER DEV
#4-260085

7/29/96 Review of 7/9/96 S. Characterizat- Rpt.

1. confirm hydraulic characteristics ___
2. still no upgradient well/samples!
3. TP 1 + 2 — Tank "Monitoring Probes" — water samples? ___
4. City's water wells? ___
5. plume expected (leading edge) early July to Mid Sept-96 — actly yet? ___
6. other wells downgradient + outside of city?

Storage coefficient ≅ porosity less surface tension effects (3)

transmissivity ≡ rate which water flows through a unit width (unit gradient) under S = 1



T = Kb

hydraulic conductivity ___ 250 ft/day

$Q = K i A$

7/31/96 — copy of p. 3/4 to Martha Sabol to review

8/5/96 w Martha Sabol

14 ← fps. 22 fps

.0125

270 K 130

OK

$V_{eff.} = \frac{K}{n_{eff}} \left(\frac{\Delta h}{\Delta d} \right)$ head

effective porosity = [%]

NOTIFICATION DATA FOR UNDERGROUND STORAGE TANKS

Tank Data

FACILITY ID	4-080002	4-080002
TANK ID	1	2
Status of Tank		
Currently In Use	X	X
Temp. Out of Use		
Perm. Out of Use		
Amendment		
Date of Installation	01-01-83	01-01-83
Age	11	11
Est. Total Capacity (Gals)	10,000	10,000
Material of Construction		
Asphalt or Bare Steel	X	X
Cath. Protected Steel		
Epoxy Coated Steel		
Composite		
Fiberglass Reinf. Plas.		
Lined Interior		
Double Walled		
Poly. Tank Jacket		
Concrete		
Excavation Liner		
Unknown		
Other, explanation		
Tank been repaired?		
Piping Material		
Bare Steel		
Galvanized Steel	X	X
Fiberglass		
Copper		
Cathodically Protected		
Double Walled		
Secondary Containment		
Unknown		
Other, explanation		
Piping Type		
Suction: No Valve		
Suction: Valve		
Pressure		
Gravity Fed		
Piping been repaired?		
Substance Stored in Tank		
Gasoline	X	X
Diesel		
Gasohol		
Kerosene		
Heating Oil		
Used Oil		
Other, explanation		

7/31/96 Martha, does this sound suggestable? Thanks. Geoff

undwater contours continue to indicate the direction of flow is almost due th. This indicates well RRMW1 is in the correct position to monitor the pact of the release. Table 3 shows all available groundwater measurements wells near the site indicating well SMW1 was a foot higher in July of 1995 n on June 14th of 1996, thus indicating groundwater will probably rise at st another foot, and maybe higher before the end of the irrigation season. is flushing of water can be expected to further reduce the concentration of in the groundwater based upon the rate of flow.

On June 13, a well at the Roadrunner (Well MW1) was pumped for 25 nutes at the rate of 15 gpm. The water level after 25 minutes was stable at a drawdown of 0.71 feet. Thus, specific capacity is 21 gpm per foot of awdown. The Theis equation can be modified to calculate transmissivity m specific capacity (Heath, 1983). Given a 12-inch effective diameter for s well, and an estimate of the storage coefficient of 0.20 (see below), the nsmissivity for this well is estimated to be 2500 ft^2/day. Because the eened interval is 10 feet, hydraulic conductivity is on the order of 250 day. Water level measurements (June 14) show a hydraulic gradient of 125 ft/ft based on triangulation of three wells: RRMW1 at the Roadrunner e, and Wapato Shell wells MW1 and MW3. The apparent direction of flow S14E.

Regionally, the unconfined aquifer beneath Wapato is known as the ppenish alluvial aquifer, and has been described in detail by Bolke and rivan (1981). In the Wapato vicinity, the saturated thickness of the aquifer 150 to 200 feet, and lateral hydraulic conductivity ranges from proximately 270 to 430 ft/day. Storage coefficient (based on measurements specific yield) is estimated at 0.20, and the direction of flow in the Wapato cinity is generally SSE. Hydraulic gradient in the Wapato vicinity is shown approximately 0.0024 ft/ft, based on March 1972 data. Water levels can vary much as 15 ft seasonally within less than two miles of Wapato, primarily cause of irrigation. The March 1972 data in the report reflect annual low ater levels. Given the estimated 0.20 storage coefficient from Bolke and rivan, we estimate the effective porosity is 0.25.

Given the hydraulic gradient observed in mid-June, an effective orosity of 0.25, and using the hydraulic conductivity range of Bolke and rivan, the rate of ground water flow is expected to be 14 to 22 ft/day at the te.

The Washington State Department of Ecology, Yakama Indian Nation, ity of Wapato, USCS and the School District have all been contacted to etermine if there are any wells used for drinking water downgradient of the lease. All residences in the City of Wapato are on City water. There are no nown drinking water uses of this aquifer within the City of Wapato. The nly uses of the aquifer are for irrigation of two City parks on Camas Avenue

includes gravel pack (?)

good - But is this under static conditions?

where are these wells in relation to the site?

1972 data!

Show calculation with reference cited.

$V = \frac{K}{n}\frac{dh}{dl}$

270 → 430 ft/day

3 → 4.13 ft/day

$V_1 = \frac{270}{.25}(.0024) \doteq 3$ ft/day

$V_2 = \frac{430}{.25}(.0024) = 4.13$ ft/day

(C.W. Fetter p. 120) "Ave. linear velocity"